

# Planning Value

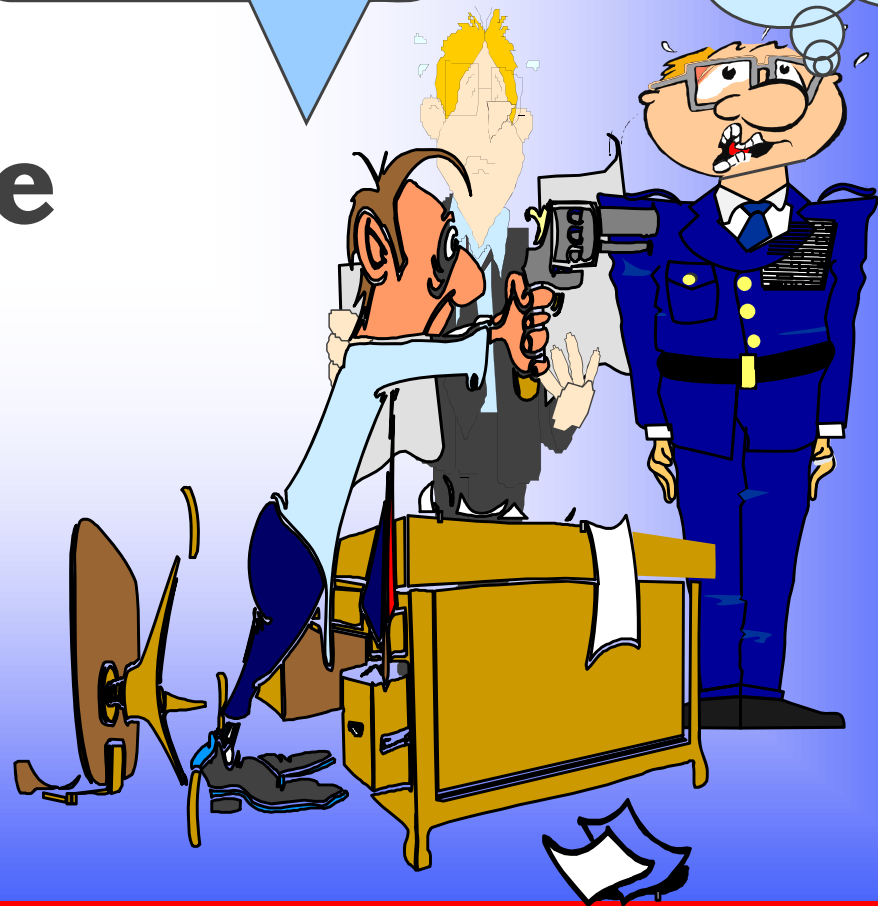
**VS**

# Earned Value



You thought  
earning value was  
just a joke.

I never  
thought he  
would look  
at that chart

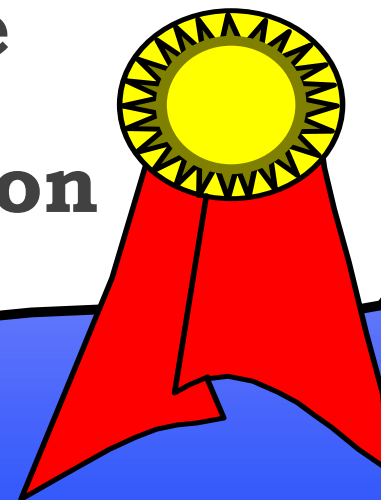


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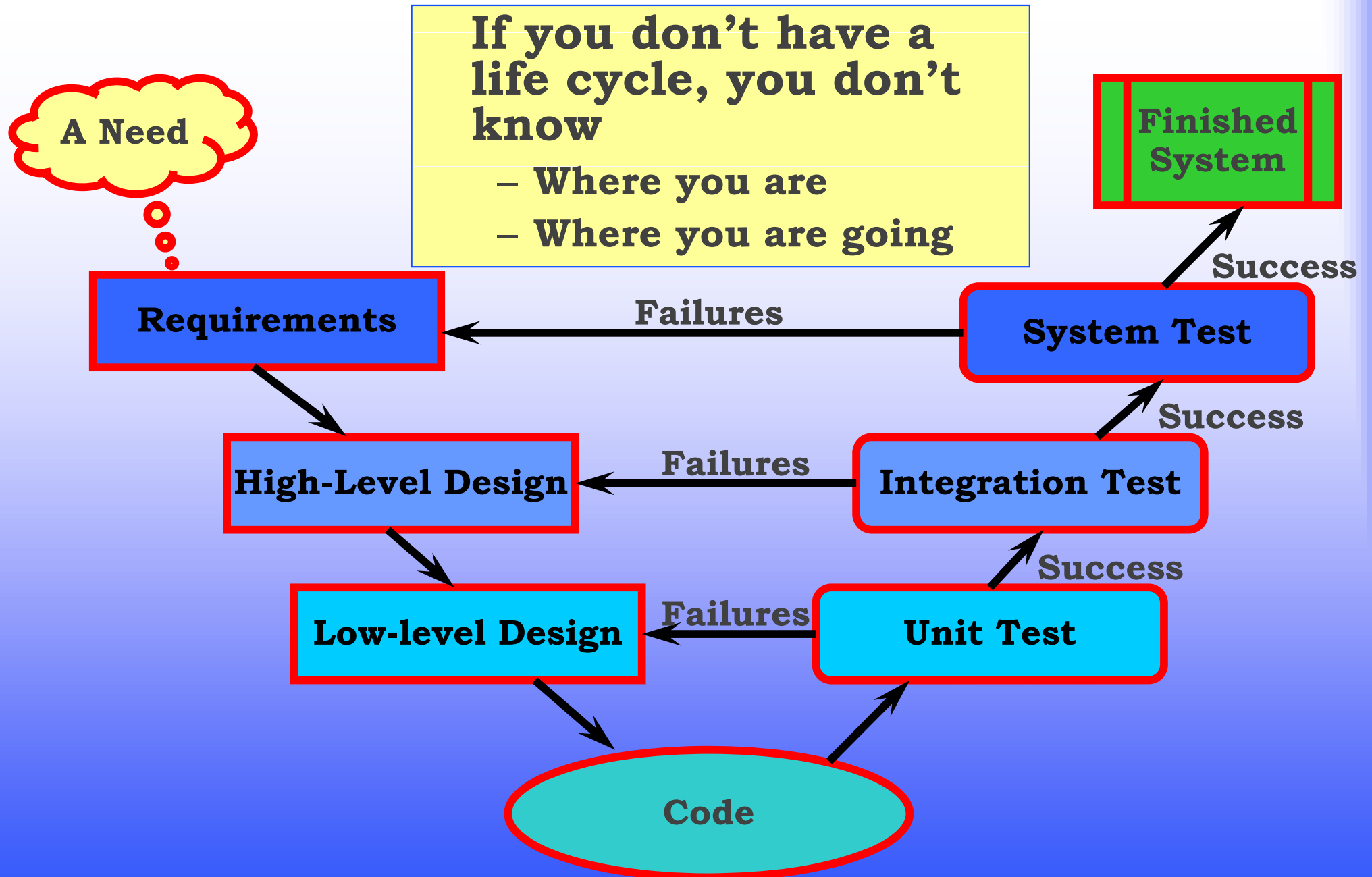
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# Topics

- ❖ **Lifecycles**
- ❖ **Development**
- ❖ **Planning Value**
- ❖ **Stones to Pebbles**
- ❖ **Pebble Values**
- ❖ **Earning Value**
- ❖ **Communication**



# Get a Life(cycle)

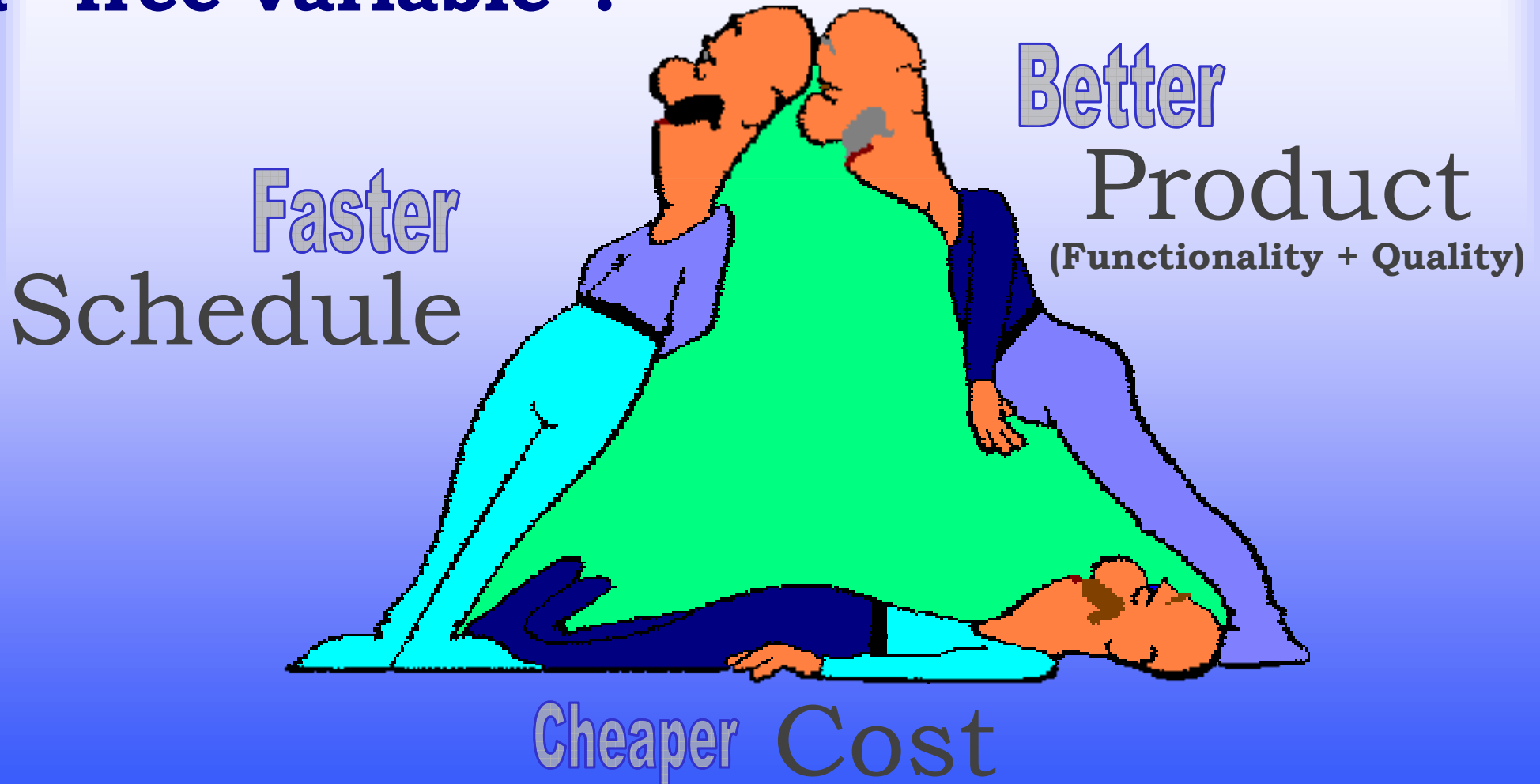


# Lifecycles Strengths and Weaknesses

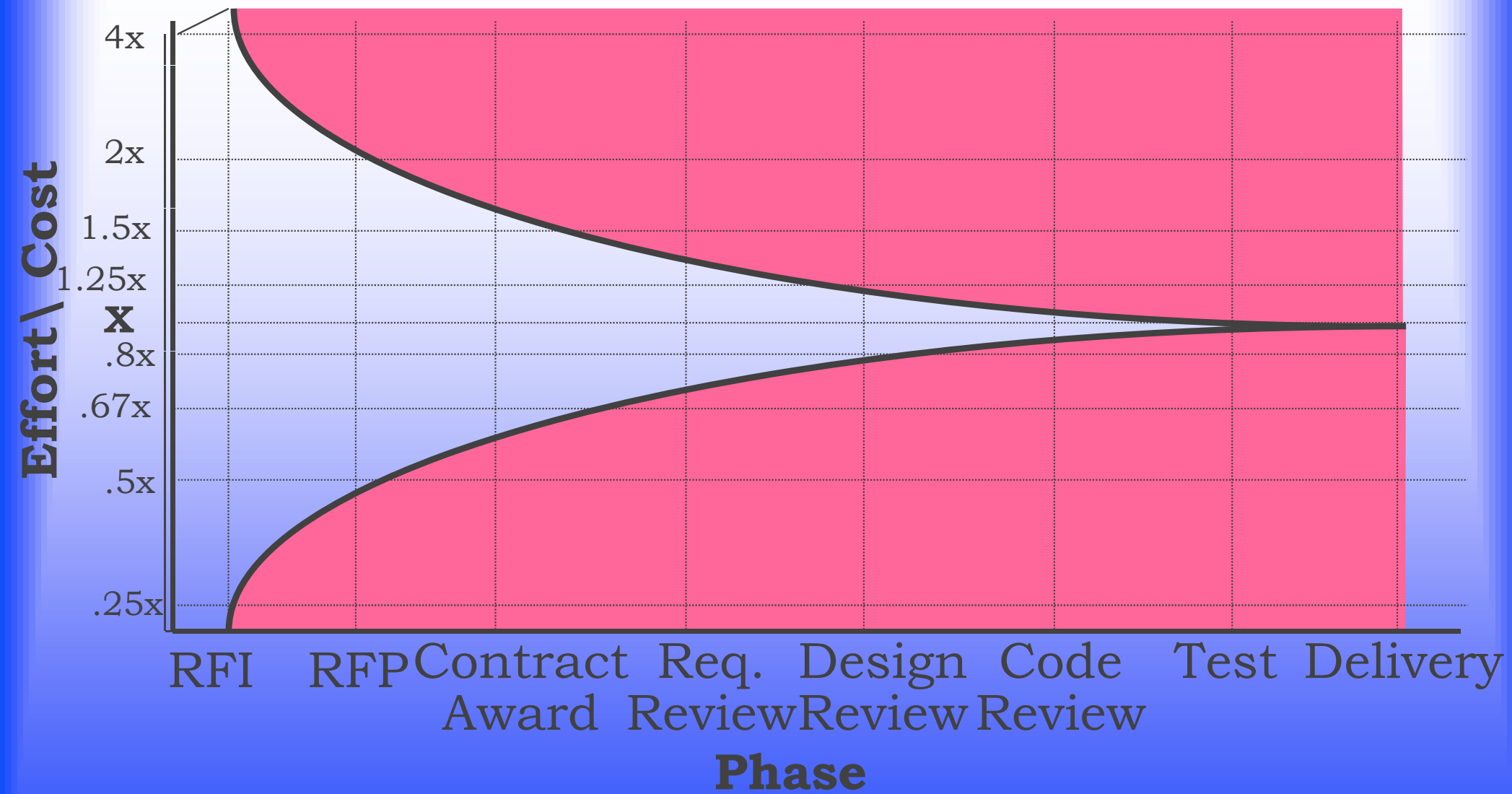
<i>Capability</i>	<i>Pure Waterfall</i>	<i>Code-and - Fix</i>	<i>Spiral</i>	<i>Modified Waterfall</i>	<i>Prototype</i>
<b>Poorly understood requirements</b>	Poor	Poor	Excellent	Fair to Excellent	Excellent
<b>Poor Architecture</b>	Poor	Poor	Excellent	Fair to Excellent	Poor to Fair
<b>Highly Reliable System</b>	Excellent	Poor	Excellent	Excellent	Fair
<b>System Growth Built in</b>	Excellent	Poor to Fair	Excellent	Excellent	Excellent
<b>Risk Management</b>	Poor	Poor	Excellent	Fair	Fair
<b>Predefined Schedule</b>	Fair	Poor	Fair	Fair	Poor
<b>Midcourse Correction</b>	Poor	unknown	Fair	Fair	Excellent
<b>Customer Visibility</b>	Poor	Fair	Excellent	Fair	Excellent
<b>Management Visibility</b>	Fair	Poor	Excellent	Fair to Excellent	Fair
<b>Low Management and developer skill level</b>	Fair	Excellent	Poor	Poor to Fair	Poor
<b>Low Overhead</b>	Poor	Excellent	Fair	Excellent	Fair

# The Development Triangle

**You can control only two sides of a triangle; The third side MUST be a “free variable”.**

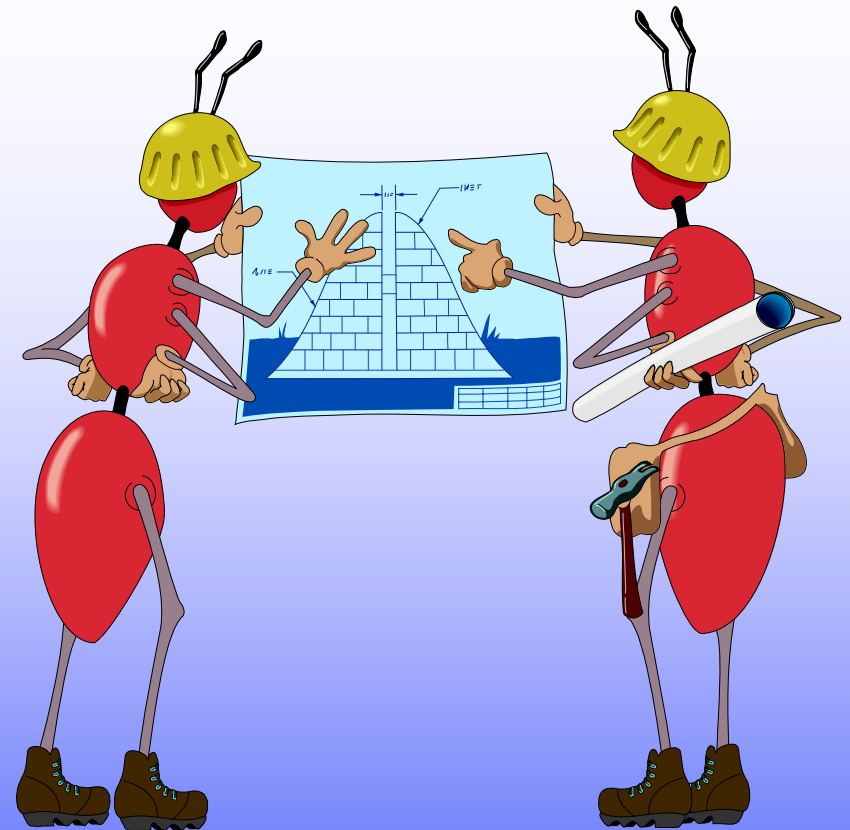


# Change Possibility



# Planning Value

- Plan a value for each phase and task.
- All phases sum to the total project.
- All tasks sum to each phase.
- The planned value for each task is the percent of the value for phase.
- Simple measures are the best and easiest.





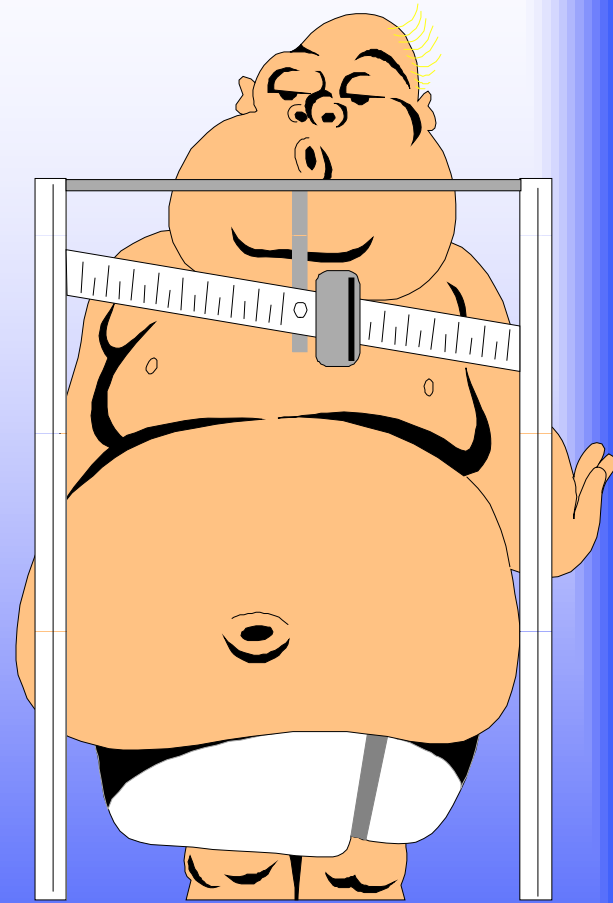
# Plan Example

Task #	Task Description	Plan Hours	Cum Hours
1	Presentation Plan	1	1
2	Presentation Outline	2	3
3	Create Presentation	12	15
4	Review Presentation	3	18
5	Present	1	19
6	Postmortem	1	20



# Plan Value Example

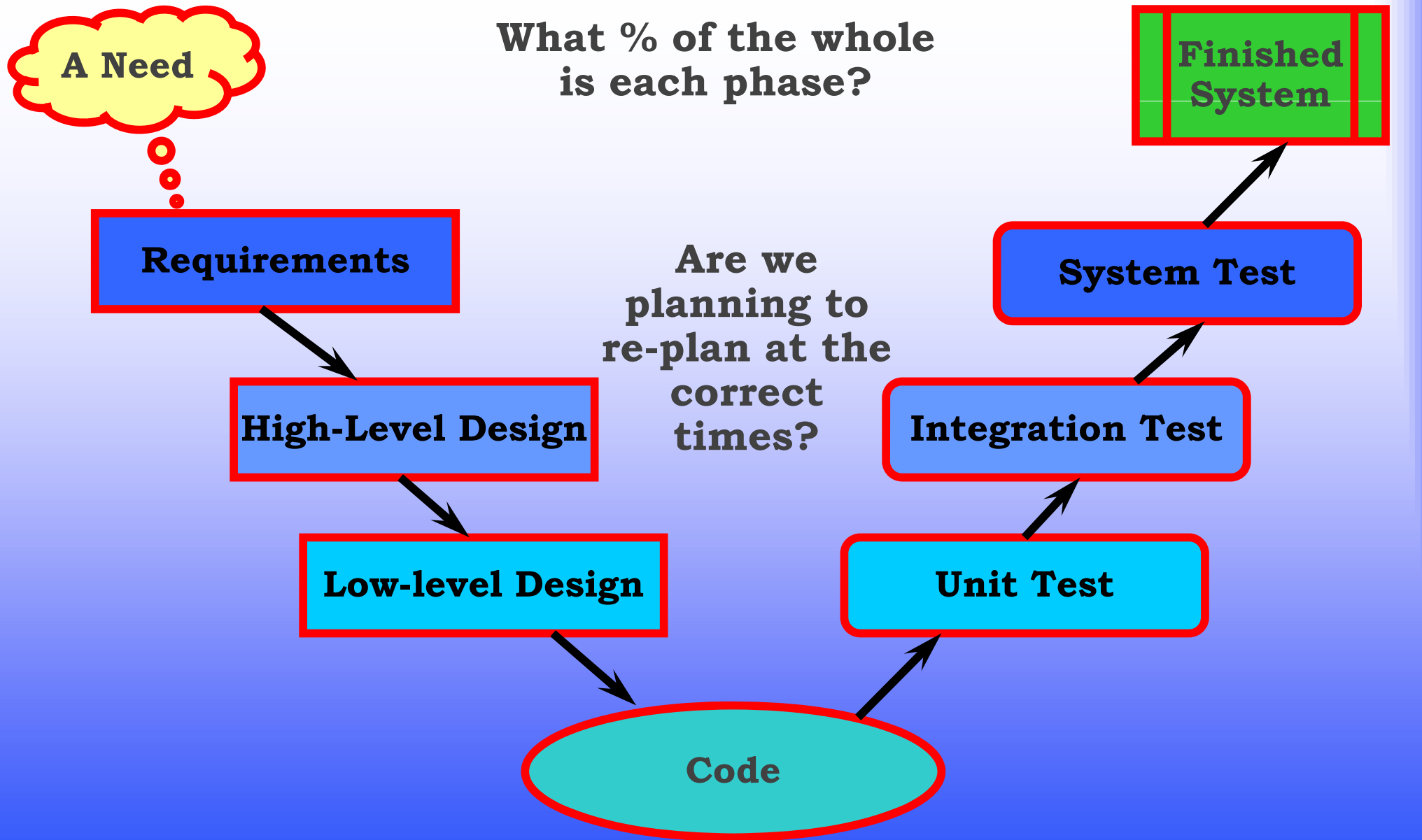
Task #	Task Description	Plan Hours	Cum Hours	Plan Value	Cum Value
1	Presentation Plan	1	1	5	5
2	Presentation Outline	2	3	10	15
3	Create Presentation	12	15	60	75
4	Review Presentation	3	18	15	90
5	Present	1	19	5	95
6	Postmortem	1	20	5	100



# Plan Value Example with Schedule

Task #	Task Description	Plan Hours	Cum Hours	Week Plan	Plan Value	Cum Value
1	Presentation Plan	1	1	1	5	5
2	Presentation Outline	2	3	1	10	15
3	Create Presentation	12	15	3	60	75
4	Review Presentation	3	18	4	15	90
5	Present	1	19	5	5	95
6	Postmortem	1	20	5	5	100

# Planning Milestones



Isn't this the same guy  
who made us attend  
the "Planning  
Seminar" last week?

I'll go gather the  
requirements and  
come up with a  
design. The rest of  
you **START  
CODING!!**

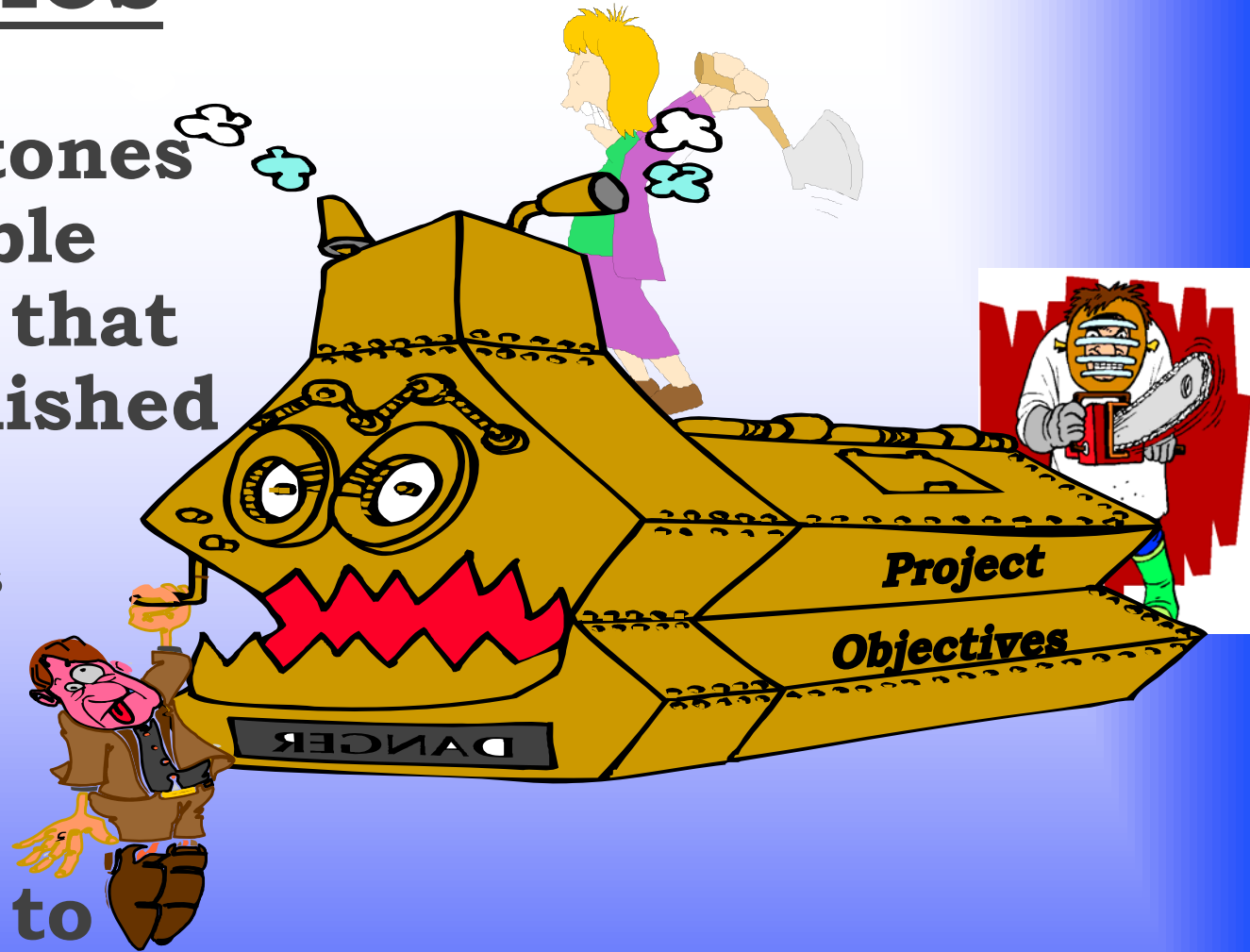


# Slicing Milestones to Inch Pebbles

- **Separate Milestones into Measure-able individual task that can be accomplished**

- Review document
- Identify interfaces
- Write test plan

- **Identify inputs to and outputs from each task (including Critical Path)**



# Planning Milestones

If you  
don't  
know  
enough to  
plan well,  
**plan often.**

More detailed  
Plan or Re-plan

System  
Delivery

**Measure-able  
Milestones**

Entire Plan

Know  
the  
**critical  
path.**

# Example - Iterative Approach

## ➤ Phase I 35%

- Planning 7.5%
  - » Entire Project 5%
  - » Phase 2.5%
- Requirements 25%
- Design 25%
- Code 30%
- Test 12.5%

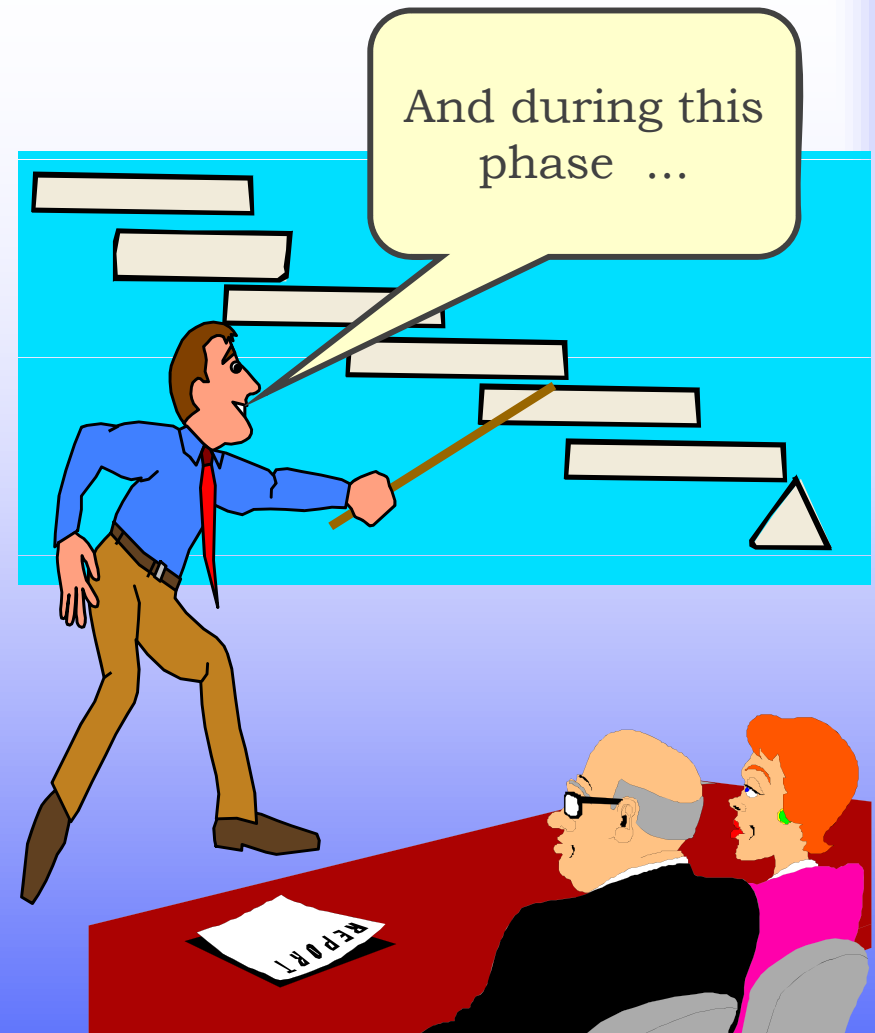
## ➤ Phase II 30%

- Planning 2.5%
- Requirements 25%
- Design 25%
- Code 30%
- Test 12.5%

## ➤ Phase III 30%

- Planning 2.5%
- Requirements 25%
- Design 25%
- Code 30%
- Test 12.5%

## ➤ System Test 5%





# Plan Value Example

## Phase I

Task #	Task Description	Plan Hours	Cum Hours	Plan Value	Cum Value
1	Project Plan	200	200	5	5
2	Phase Plan	100	300	2.5	7.5
3	Requirements	1000	1500	25	32.5
4	Design	1000	2500	25	57.5
5	Code	1200	3700	30	87.5
6	Test	500	4200	12.5	100

# Detailed Planned Value

## Example

### Project Plan (part of Phase I)

Task #	Task Description	Plan Hours	Cum Hours	Plan Value	Cum Value
1	Identify Resources for each Phase	8	8	4	4
2	Identify Requirements	78	86	39	43
3	Match Requirements to Phases	20	106	10	53
4	Identify Risk Areas	20	126	15	63
5	System Test Plan	50	176	25	88
6	Review	20	196	10	98
7	Postmortem	4	200	2	100

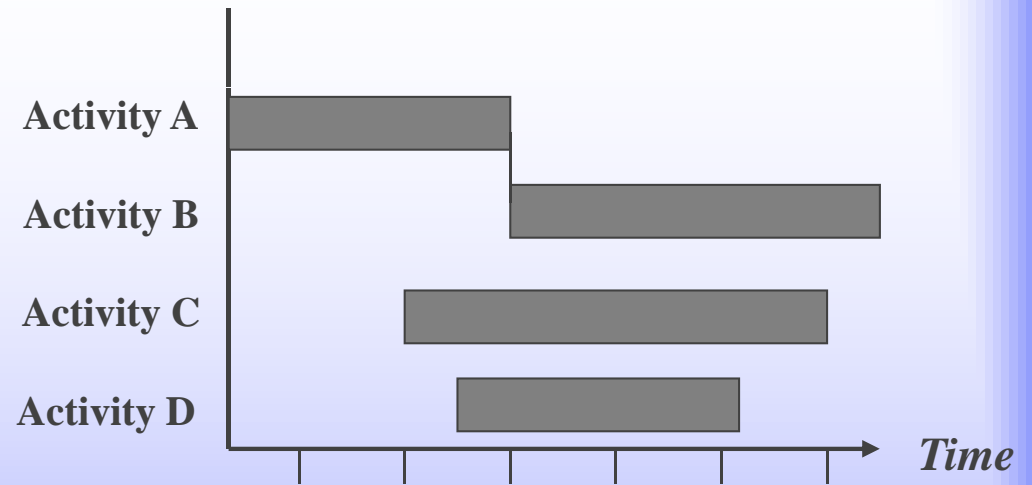
**Including  
Critical  
Path**



# Duration Charts

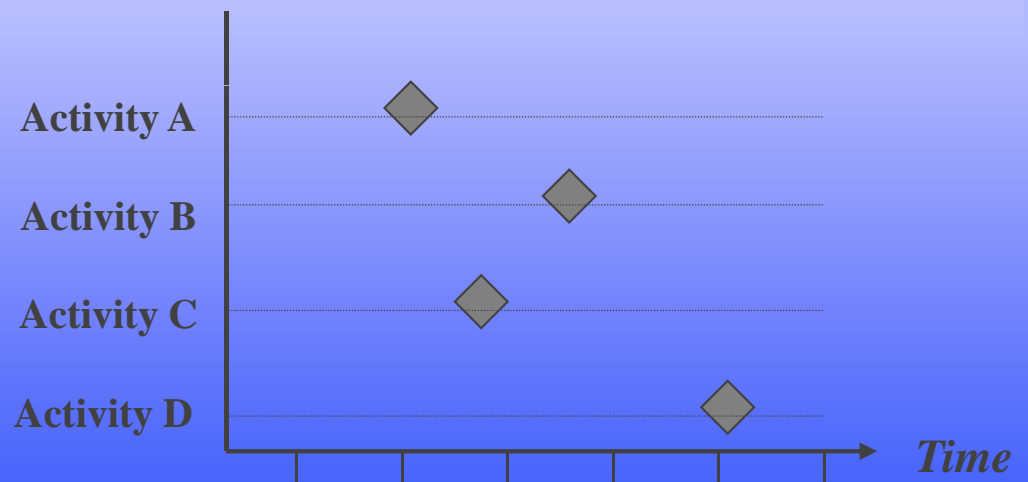
## ◆ Gantt (Bar) Chart

- Simple
- Can show dependencies
- Tracking planned vs actual



## ◆ Milestone

- Markers showing progress
- Doesn't show consumption of resources
- Normally part of Gantt chart
- *Zero duration*



# **Critical Path Method (CPM)**

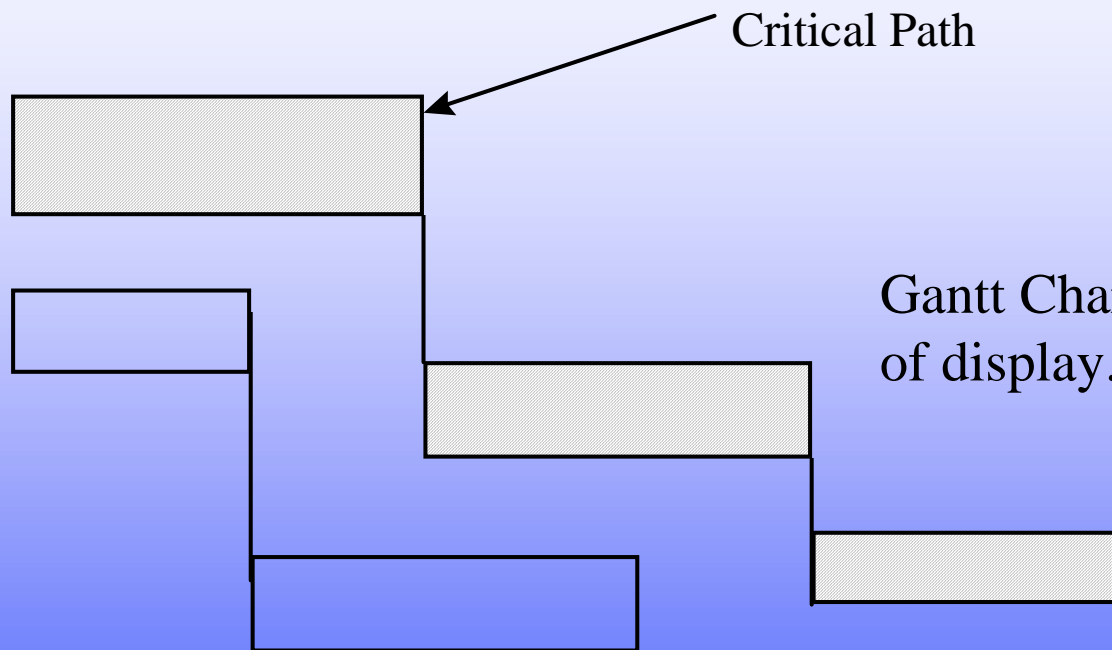
## **➤ Network analysis technique**

- Used to predict project duration by analyzing path with least amount of float**
- Early dates: Forward pass calculation**
- Late dates: Backward pass calculation**

## **➤ Critical path**

- The series of activities determining the earliest completion**
- Usually defined as activities with float  $<$  or  $=$  a specified value (often zero)**

# Critical Path Method



# Rebuilding Milestones from Inch Pebbles

## ➤ To make a schedule you need 3 things

- the estimated direct project hours
- a calendar of available direct hours
- the order in which the tasks will be done

## ➤ You then need to

- estimate the hours needed for each task
- spread these hours over the calendar of available hours
- Make sure you check and recheck *Critical Path*



# Earning Value

- You earn value when you **complete** a task
- No partial credit



# Earned Value Example

## Project Plan (part of Phase I)

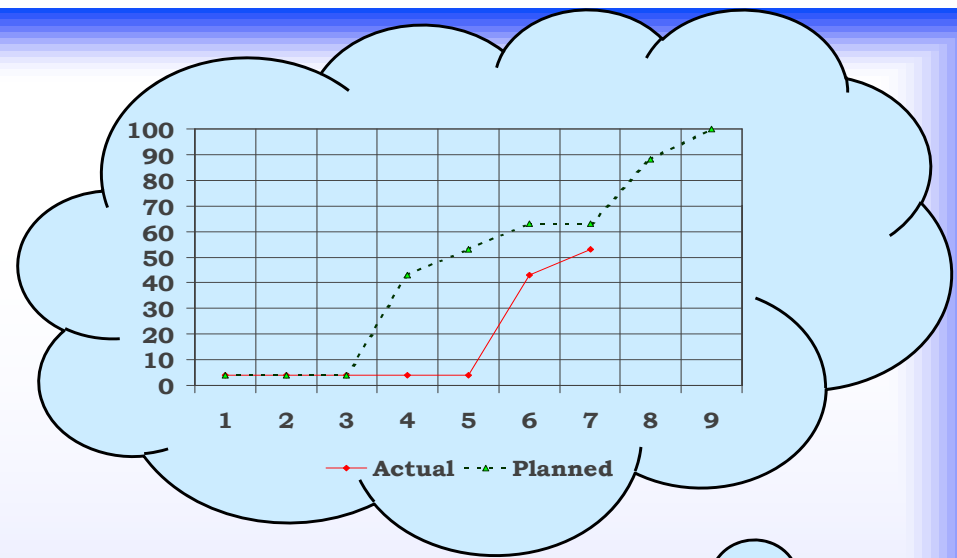
Task #	Task Description	Plan Hours	Cum Hours	Plan Value	Cum Plan Value	Plan Week	Week	Hours	Actual Hours Cum	Cum Earned Value
1	Identify Resources for each Phase	8	8	4	4	1	1	7	7	4
2	Identify Requirements	78	86	39	43	4	6	96	103	43
3	Match Requirements to Phases	20	106	10	53	5	7	24	127	53
4	Identify Risk Areas	20	126	10	63	6				
5	System Test Plan	50	176	25	88	8				
6	Review	20	196	10	98	9				
7	Postmortem	4	200	2	100	9				

Only get credit on the week completed



# Status Reporting

- Status is earned compared to planned
- When earned and plan get too far off balance  
*Re-Plan*
- *Remember life happens*
- *You probably never can catch up*



# Communication

- Large-scale software requires many people - and without a process, there is little (if any) effective communication.
- Earned value versus planned value can be a simple sanity check



# Questions

